IT Unit 3

Topic 1

# Organisations & Data Management

**Database design tools, p 36**

1. ***Explain why design is an important step in creating a solution.***Design is an important step in creating a solution because allows the designer to work out the scope of the solution. In this stage, the materials, method, appearance, and the decision of what can and cannot be done are to be considered.

**Naming conventions**

1. ***What is the importance of planning out naming conventions before you begin developing the solution? List examples of naming conventions for a database.***It is important that every field and object within a database is named properly so that it can easily be identified by a developer or a user. Eg:  
   -Tbl = Table  
   -Rpt = Report  
   -Qry = Query  
   -Frm = Form  
   -Cus = Customer
2. ***What is to be avoided and how is readability assisted?***Avoid using spaces and underscores in object names. To aid readability, a mix of upper case and lower case characters is used in each name.
3. ***Describe the purpose of the following design tools:*** 
   1. ***data dictionary***The purpose of a data dictionary is to formalise the fields and their data type, format and size. This gives a developer a precise explanation of how each field should be set up in each table, and also to provide details of built-in validation.
   2. ***data structure diagram***The purpose of data structure diagram is to indicate the relationships that exist between the specific tables of a planned database so that a developer will know the tables ought to be linked. It is important to indicate the type of relationship in the diagram.
   3. ***entity-relationship diagram***An Entity-Relationship Diagram (ERD) is used by database designers to establish the interrelationships between different data elements.
   4. ***IPO chart***IPO charts are diagrams used to identify inputs, outputs and the processing steps required to transform the inputs into the outputs.
   5. ***query design and layout diagram***Query design should specify the fields to be included and the tables to which they belong. The design will also include the criteria for the query and how the resulting records are to be ordered. Layout diagram is a sketch that shows the elements to be included on an input form; the diagram should indicate the placement of fields and labels, the fonts to be used and any graphics or other elements to be included.
4. ***What is the purpose of test data? What should be considered when developing test data?***

***Give some examples of electronic validation that can be established using database software.***The purpose of test data is to ensure that the solution is functioning correctly by comparing it to what was planned in the design stage with test data. Test data should test all aspects of the solution including identification and handling of unreasonable, missing or incorrect data (validation), formulas and summary totals. EG:  
-Range checks  
-Spell checks  
-Grammar checks  
-Predefined lists  
-Data type checks  
-Input masks  
-Alignment  
-IF() statements.